270528-TC
Hangers and Support for Telecommunications Systems

Related Documents
The following related sections of the OT standards shall also be applicable to this section.

OT Engineer shall approve all product cut sheets prior to purchasing and installation by contractor. Reference S9 Approved Products.

S1 Approved Product Request
S1 Change Request
S1 Request for Variance
S1 Resource Allocation Permit
S2 Introduction
S3 SOP and Policy
S4 275116-TC CORE PA and Emergency Tenant Paging System
S4 Emergency Tenant Paging
S7 271519-TC Horizontal Cabling
S7 270000-TC Common Work
S7 270100-TC Systems Cabling
S7 270101-TC COMCAST Standard
S7 271116-TC Cabinets Racks Frame Enclosures
S7 271313-TC Cable Splicing and Termination
S7 271523-TC Optical Fiber Splicing and Terminations
S7 271600-TC Telecommunications Station Equipment
S9 Approved Products

Part 1 - General

1.1 Work Included

A. Provide all labor, materials, tools and equipment required for the complete installation of work called for in the Construction Documents

1.2 Scope of Work

A. This document describes the products and execution requirements relating to furnishing and installing Telecommunications Cabling. Communication cabling support is covered under this document.

B. This section includes minimum requirements for the following:
• J-Hooks **(Not allowed without an approved variance)**
• Threaded Rod Cover

- Stackable Cable Rack Spacers
- Cable Management

C. All cables and related terminations, support and grounding hardware shall be furnished, installed, wired, tested, labeled, and documented by the telecommunications contractor as detailed in this document.

D. Product specifications, general design considerations, and installation guidelines are provided in this document. Quantities of telecommunications outlets, typical installation details, cable routing and outlet types will be provided as an attachment to this document. If the bid documents are in conflict, this specification shall take precedence. The successful vendor shall meet or exceed all requirements for the cable system described in this document.

1.3 Regulatory References

A. The following industry standards are the basis for the structured cabling system described in this document.

1. **TIA/EIA**

TIA/EIA-568-B	Commercial Building Telecommunications Cabling Standard
TIA/EIA-569-A	Commercial Building Standard for Telecom Pathways and Spaces
TIA/EIA-606	Administration Standard for the Telecommunications Infrastructure of Commercial Buildings
TIA/EIA-607	Commercial Building Grounding/Bonding Requirements

NFPA

NFPA-70	National Electric Code (NEC)-1999 ISO/IEC ISO/IEC 11801Generic Cabling for Customer Premises

B. The most recent versions of all documents shall apply to this project. If there is a conflict between applicable documents, the order above shall dictate the order of precedence in resolving the issue unless an enforceable local or national code is in effect.

Part 2 - Products

2.1 Threaded Rod Cover

The Threaded Rod Cover shall be utilized to protect communication cable from abrasion caused by contact with threaded rod. The Threaded Rod Cover shall be manufactured from a gray flame-retardant polyethylene material that is UL94V-0 rated. The material shall be pliable to allow for easy installation.

Part Number	For Threaded Rod Size	Length
	½" to 5/8"	18"

2.2 J-MOD ™ Cable Support System (J Hooks) *J-hooks are not allowed without a variance*

Open top cable supports shall be utilized as a pathway for communication cabling. The J Hook cable supports shall be

manufactured from a non-conductive material suitable for use in air-handling spaces. The cable support must maintain complete horizontal and vertical 1” bend radius control and must manage up to 50 four-pair UTP cables. The system must allow for the ability to add future cable routing capacity. The cable support must provide the ability to retain the cable bundle with Hook & Loop Cable Ties.

Part Number	Description	Material*	Maximum Static Load (Lbs.)
	J Hook for wall mount applications	Nylon	30
	J Hook for use with brackets	Nylon	30
	Chaining Bracket	Galvanized Steel	120
	Ceiling Mount Bracket – 1 level	Galvanized Steel	180
	Ceiling Mount Bracket – 3 level	Galvanized Steel	180
	Drop Wire Bracket – 1 level	Galvanized Steel	20
	Drop Wire Bracket – 3 level	Galvanized Steel	40
	Threaded Rod Bracket – 1 level	Galvanized Steel	180
	Threaded Rod Bracket – 3 level	Galvanized Steel	180
	Screw-on Beam Clamp Bracket – 1 level	Galvanized Steel	180
	Screw-on Beam Clamp Bracket – 3 level	Galvanized Steel	180

** Not for use with chaining brackets

‡ Available in natural and black

* Suitable for use in air handling spaces per UL 2043. Listed in accordance with CAN/ULC S102.2 when mounted as single units or in pairs. Minimum spacing of 4 ft. (1220mm) required between mount points. (Flame Spread Rating = 0, Smoke Developed Classification = 30)

2.3 J Hook Cable Support System *J-hooks are not allowed without a variance*

Open top cable supports shall be utilized as a pathway for communication cabling. The J Hook cable supports shall be manufactured from a non-conductive material suitable for use in air-handling spaces. The pre-riveted J Hook assemblies must maintain complete horizontal and vertical 1" bend radius control and must manage up to 48 four-pair UTP cables. The cable support must provide the ability to retain the cable bundle with Hook & Loop Cable Ties.

Part Number	Description	Material*	Max. Static Load (Lbs.)
	J Hook for wall mount applications only. One ¼" (M6) mounting hole for user supplied screw.	Nylon	30
	J Hook with ceiling mount bracket that has one 3/16" (M5), ¼" (M6), and 3/8" (M10) mounting hole.	Nylon J Hook with metal attachments	30
	J Hook with clip for use with #12 wire, threaded rod up to 3/8" in diameter, or 1/8" –3/8" thick flanges.	Nylon J Hook with metal attachments	10
	J Hook with screw-on beam clamp for use with flanges up to ½" thick.	Nylon J Hook with metal attachments	30
	J Hook with screw-on beam clamp for use with flanges up to ½" thick. Rotates 360 degrees.	Nylon J Hook with metal attachments	30
	J Hook with hammer-on beam clamp for use with flanges 1/8" – ¼"	Nylon J Hook with metal	30

	thick. Rotates 360 degrees.	attachments	
	J Hook with hammer-on beam clamp for use with flanges 5/16" – 1/2" thick. Rotates 360 degrees.	Nylon J Hook with metal attachments	30
	J Hook with hammer-on beam clamp for use with flanges 9/16" – 3/4" thick. Rotates 360 degrees.	Nylon J Hook with metal attachments	30
	J Hook with z-purlin clip for use with angled flanges up to ¼" thick.	Nylon J Hook with metal attachments	30
	J Hook with c-purlin clip for use with vertical flanges up to ¼" thick.	Nylon J Hook with metal attachments	30
	J Hook with under floor pedestal support clamp for use with pedestal support up to 1" in diameter.	Nylon J Hook with metal attachments	30

* Suitable for use in air handling spaces per UL 2043. Listed in accordance with CAN/ULC S102.2 when mounted as single units or in pairs. Minimum spacing of 4 ft. (1220mm) required between mount points. (Flame Spread Rating = 0, Smoke Developed Classification = 30)

Part 3 - Execution

3.1 Horizontal Distribution Cable Installation

Cable shall be installed in accordance with manufacturer's recommendations and best industry practices.

A pull cord (nylon; 1/8" minimum) shall be co-installed with all cable installed in any conduit.

Cable raceways shall not be filled greater than the TIA/EIA-569-A maximum fill for the particular raceway type or 40%.

Cables shall be installed in continuous lengths from origin to destination (no splices) except for transition points, or consolidation points.

Where transition points or consolidation points are allowed, they shall be located in accessible locations and housed in an enclosure intended and suitable for the purpose.

The cable's minimum bend radius and maximum pulling tension shall not be exceeded.

If a J-hook or trapeze system is used to support cable bundles all horizontal cables shall be supported at a maximum of 48 to 60 inch (1.2 to 1.5 meter) intervals. At no point shall cable(s) rest on acoustic ceiling grids or panels.

Horizontal distribution cables shall be bundled in groups of no more than 48 cables for main bundle, split out into (2) 24 cable bundles to each panel. Cable bundle quantities in excess of 48 cables may cause deformation of the bottom cables within the bundle and degrade cable performance.

Cable shall be installed above fire-sprinkler systems and shall not be attached to the system or any ancillary equipment or hardware. The cable system and support hardware shall be installed so that it does not obscure any valves, fire alarm conduit, boxes, or other control devices.

Cables shall not be attached to ceiling grid or lighting fixture wires. Where support for horizontal cable is required, the contractor shall install appropriate carriers to support the cabling.

Any cable damaged or exceeding recommended installation parameters during installation shall be replaced by the contractor prior to final acceptance at no cost to the Owner.

Cables shall be identified by a self-adhesive label in accordance with the System Documentation Section of this specification and ANSI/TIA/EIA-606.

The cable label shall be applied to the cable behind the faceplate on a section of cable that can be accessed by removing the cover plate.

Unshielded twisted pair cable shall be installed so that there are no bends smaller than four times the cable outside diameter at any point in the run and at the termination field.

Pulling tension on 4-pair UTP cables shall not exceed 25-lbf for a four-pair UTP cable.